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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,071	08/20/2004	Govindarajan Natarajan	FIS920040062US1	5070

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LAW OFFICE OF DELIO & PETERSON, LLC.
121 WHITNEY AVENUE
NEW HAVEN, CT 06510

EXAMINER

RAMDHANIE, BOBBY

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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04/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,071	Applicant(s) NATARAJAN ET AL.	
	Examiner BOBBY RAMDHANIE	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 01/12/2009, with respect to the rejection(s) of claim(s) 1-20 under 102, & 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Briscoe et al (US20040043479). Please see rejections below. The new grounds of rejection are necessitated by Applicant's amendments to the claims.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13-15 & 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to how to determine which selected horizontal openings are connected and which horizontal openings are not.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briscoe et al (US20040043479).

7. Applicants' claims are toward a device and a method.

8. Regarding Claims 1-4 & 7, Briscoe et al discloses the ceramic micro well plate comprising: A). A first ceramic greensheet (See Figure 3 Item 104); B). At least one vertical opening in said first ceramic greensheet, said vertical opening in said first ceramic greensheet being a reaction chamber of said micro well plate (See Figure 3); C). A second ceramic greensheet above said first ceramic greensheet (See Figure 3 Item 102); D). At least one vertical opening in said second ceramic greensheet that is aligned with said at least one vertical opening in said first ceramic greensheet (See Figure 3 Item 102 vertical Column where Items 156, 166, or 294 are labeled; alignment is interpreted as to be arranged to be parallel); and E). An optical micro plug residing within and entirely filling said at least one vertical opening in said second ceramic greensheet, whereby said optical micro plug allows viewing of said reaction chamber of said micro well plate by residing at above thereof (See Figure 3 Item 294; window).

9. Briscoe et al does not disclose that the optical micro plug is positioned at the bottom of the reaction chamber.

10. Briscoe et al does however, disclose the positioning of a plug which is in alignment with the vertical openings in the first and second openings (See Figure 27 Item 2090; detector). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify this plug to be an optical micro plug in the rearrangement as recited in the instant claims, because according to Briscoe et al, although the detector is conveniently provided as a thermal conductivity detector, the plug can be other types of detectors as well (See Briscoe et al [0374] & [0376]). Optical detectors such as windows would be included in this category.

11. Additional Disclosures Included: Claim 2: Said first and second ceramic greensheets are laminated to one another (See [0100]); Claim 3: Said first and second ceramic greensheets are sintered greensheets (See [0100]); Claim 4: The ceramic micro well plate of Claim 1 wherein said optical micro plug comprises an optically effective material selected from the group consisting of PDMS, PDMS plus a low concentration of capture molecules, glass, silica, ceramic, polymer and combinations thereof (See [0330]); and Claim 7: Said optical micro plug comprises a sensor (See [0330] a sensor is needed for a detector).

12. Regarding Claims 13 & 14, Briscoe et al discloses the ceramic micro well plate comprising: A). A first ceramic greensheet; B). A first plurality of vertical openings in said first ceramic greensheet, said first plurality of vertical openings in said first ceramic

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greensheet being a plurality of reaction chambers; C). A second ceramic greensheet under said first ceramic greensheet; a plurality of horizontal openings in said second ceramic greensheet, said plurality of horizontal openings connecting selected ones of said first plurality of vertical openings; a third ceramic greensheet above said second ceramic greensheet; D). A second plurality of vertical openings in said third ceramic greensheet aligned with said first plurality of vertical openings in said first ceramic greensheet; and an optical micro plugs residing within and entirely filling said second I plurality of vertical openings, said optical micro plugs aligned with said first plurality of vertical openings to allow viewing of said reaction chamber of said micro well plate by residing at above thereof (See Figure 27).

13. Briscoe et al does not disclose a plurality of optical micro plugs inserted into the third ceramic greensheet that is under thereof the second greensheet.

14. Briscoe et al does however disclose a third greensheet located below the second and first greensheets in which a plug is inserted into the third greensheet (See Figure 27 Item 2090; detector). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify this plug to be an optical micro plug in the rearrangement as recited in the instant claims, because according to Briscoe et al, although the detector is conveniently provided as a thermal conductivity detector, the plug can be other types of detectors as well (See Briscoe et al [0374] & [0376]). Optical detectors such as windows would be included in this category.

15. In addition, it would have been obvious to one of ordinary skill in the art to modify the singular plug to be a plurality of plugs since it has been held that mere duplication of

the essential working parts of a device involves only routine skill in the art. St. *Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

16. Additional Disclosures Included: Claim 14: Wherein said plurality of optical micro plugs comprise a transparent material selected from the group consisting of PDMS, PDMS in combination with capture molecules, glass, silica, ceramic, polymer and combinations thereof (See [0330]).

17. Regarding Claims 16-19, Briscoe et al discloses the method of forming a ceramic micro well plate comprising: A). Providing a first ceramic greensheet; forming a first plurality of vertical openings in said first ceramic greensheet, each of said first plurality of vertical openings in said first ceramic greensheet being reaction chambers of said micro well plate (See Figure 3 Item 104); B). Providing a second ceramic greensheet; forming a second plurality of vertical openings in said second ceramic greensheet; providing said second ceramic greensheet above said first ceramic greensheet (See Figure 3 Item 102); C). Aligning said first plurality of vertical openings in said first ceramic greensheets with said second plurality of vertical openings in said second ceramic greensheet (See Figure 3 vertical openings are aligned); and D). Depositing an optically effective material to fill said a second vertical opening in said second ceramic greensheet to form an optical micro-plug within said second vertical opening (See Figure 3 Item 294), whereby said optical micro plugs reside at above of said reaction chamber of said micro well plate to allow viewing of said reaction chambers of said micro well plate (See Figure 3 Item 294).

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18. Briscoe et al does not disclose the plurality of vertical openings that are filled with a plurality of micro plugs.

19. Briscoe et al does however disclose the positioning of a micro plug in the bottom of the reaction chamber (See Figure 27 Item 2090). Briscoe et al also discloses that the micro plug may take many forms (See [0330]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the second greensheet with a plurality of micro plugs since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. *Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

20. Additional Disclosures Included: Claim 17: The method of Claim 16 further including the steps of: providing a third ceramic greensheet; forming a plurality of horizontal openings in said third ceramic greensheet; and positioning said third ceramic greensheet between said first and second ceramic greensheets such that selected ones of said plurality of horizontal openings connecting selected ones of said first plurality of vertical openings while said plurality of optical micro plugs are aligned with said first plurality of vertical openings being said reaction chambers (See Figures 3 & 27; both Figures have multiple greensheets as recited); Claim 18: The method of claim 16 further including laminating said first and second greensheets to form said micro well plate having said plurality of optical micro plugs (See [0100]); and Claim 19: The method of claim 18 further including sintering said laminated first and second greensheets to form said micro well plate having said plurality of optical micro plugs (See [0100]).

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21. Regarding Claims 5, 6, & 8-12, 15, & 20 Briscoe et al discloses the ceramic micro well plate of Claim 1, 13, 16, respectively except wherein said optical micro plug comprises a lens, magnet marker molecules residing therein having high affinity to their target for identification and quantification of said target., comprises a conductive optical micro plug, said optical micro plug comprises a non-conductive optical micro plug, said optical micro plug comprises a heater, or said optical micro plug comprises a cooler. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro plug to be any of the above plugs, because according to Briscoe et al, other detectors may be used as well (See [0330] & See [0263] & [0269] which briefly outlines a number of additional modifications that is interpreted as being capable of being added to the micro plug; antibody coating, affinity media to bind fusion proteins or peptides, surface-fixed proteins such as recombinant protein A or G, nucleotide resins or coatings, magnetic beads, and other affinity matrix are useful in this invention).

Telephonic Inquiries

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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23. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BOBBY RAMDHANIE whose telephone number is (571)270-3240. The examiner can normally be reached on Mon-Fri 8-5 (Alt Fri off).

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. R./

/Walter D. Griffin/

Supervisory Patent Examiner, Art Unit 1797